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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/701,329	11/04/2003	Raghunath Padiyath	59346US002	4935
32692	7590	04/05/2006	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			HOANG, QUOC DINH	
			ART UNIT	PAPER NUMBER
			2818	

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/701,329

Applicant(s)

PADIYATH ET AL.

Examiner

Quoc D. Hoang

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-29 and 31-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-29 and 31-33 is/are rejected.
- 7) ☒ Claim(s) 1-8, 10-29 and 31-33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/22/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/11/2006 has been entered.

Response to Amendment

2. Applicants' amendment filed on 01/11/2006. Claim 9 has been canceled. Claim 32 and 33 are newly added. Claims 1-8 and 10-33 are pending in the application.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "an insulating layer" in claim 5 and claim 24, and "a mask" in claims 11, 12, 32 and 33 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 1, 24, 32 and 33 are objected to because of the following informalities: It is not clear about "a direction" in claims 1, 24, 32 and 33. The direction refers to the direction of travel of the flexible substrate, or in direction of width of the flexible substrate. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-4, 14-20 and 22-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Cok (US Pat No. 6,936,964).

Regarding claim 1, Cok teaches a method of making an organic light-emitting device comprising:

advancing a web comprising a flexible substrate 20 in a direction (col. 2, lines 20-67 and Fig. 2);

applying a first electrode layer 14 (col. 2, lines 20-67 and Fig. 2);

applying a light-emitting layer 12 (col. 2, lines 20-67, col. 7, lines 35-60 and Fig. 2); and

applying a second electrode layer 16 electrically isolated from the first electrode layer 12 wherein the first and second electrode layers are continuous in the direction of the advancing web (col. 2, lines 20-67 and Fig. 2). *Note that a direction from left to right of the substrate 20 is considered to be "the direction" (see Fig. 2).*

Regarding claim 2, Cok teaches wherein the first electrode layer 14 is the anode and the second electrode layer 16 is the cathode (col. 2, lines 22-32).

Regarding claim 3, Cok teaches wherein the first electrode layer 14 is the cathode and the second electrode layer 16 is the anode (col. 2, lines 22-32).

Regarding claim 4, Cok teaches wherein the first electrode layer 14 is continuous in a direction perpendicular to the direction of the advancing web 1 (col. 2, lines 20-67 and Fig. 2).

Regarding claim 14, Cok teaches wherein the method is a batch process (col. 2, lines 35-67).

Regarding claim 15, Cok teaches wherein the method is a continuous process (col. 2, lines 35-67).

Regarding claim 16, Cok teaches wherein the substrate 20 comprises a pair of substantially parallel peripheral edges and the continuous electrode layer 14/20 extends to the peripheral edges of the substrate (Fig. 2).

Regarding claim 17, Cok teaches providing at least one organic charge transport layer 107 between the light-emitting layer 109 and at least one of the electrode layers (col. 5, lines 20-30).

Regarding claim 18, Cok teaches wherein the light-emitting layer 109 is selected from the group comprising small molecule emitter, a small molecule doped polymer, a light-emitting polymer, a doped light-emitting polymer, a blended light-emitting polymer, and combinations thereof (col. 7, lines 35-60).

Regarding claim 19, Cok teaches cutting a portion from the web 20 forming an organic light-emitting device having a dimension in the direction of the advancing web and an area (col. 4, lines 51-65 and Fig. 5A).

Regarding claim 20, Cok teaches wherein the continuous electrode layer is continuous beyond the dimension of the device prior to cutting (col. 4, lines 51-65 and Fig. 5A).

Regarding claim 22, Cok teaches wherein the continuous electrode layer is continuous throughout the area of the device (col. 2, lines 20-67 and Fig. 2).

Regarding claim 23, Cok teaches wherein the substrate 20 is transparent (col. 5, line 54).

Claim Rejections - 35 USC § 103

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5-8, 10-13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cok (US Pat No. 6,936,964) in view of Weaver (US Pat No. 6,664,730).

Regarding claim 5, Cok teaches the first electrode layer 14, but do not teach applying an insulating layer on a portion of the first electrode layer.

However, Weaver teaches applying an insulating layer 430 on a portion of the first electrode layer 420 (col. 8, lines 35-40 and Fig. 4). Since Cok and Weaver are all from the same field of endeavor, the purpose disclosed by Weaver would have been recognized in the pertinent art of Cok. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply the insulating layer on a portion of the first electrode layer in order to electrically reliably insulates first electrode from bus lines as taught by Weaver, column 8, lines 40-42.

Regarding claims 6 and 7, Cok does not reach teaches applying an insulating layer on a portion of the substrate.

However, Weaver teaches applying an insulating layer 200 on a portion of the substrate 210, and removing the insulating layer after applying the first electrode 420 (col. 7, lines 15-50 and Fig. 2). Since Cok and Weaver are all from the same field of endeavor, the purpose disclosed by Weaver would have been recognized in the

pertinent art of Cok. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply the insulating layer on a portion of the first electrode layer in order to form patterned electrode as taught by Weaver, column 7, lines 15-20.

Regarding claim 8, Cok teaches the first electrode layer 14, but do not teach wherein the first electrode layer is applied in a first pattern comprising at least two stripes and the stripes range from being substantially parallel to substantially diagonal to the direction of the advancing web.

However, Weaver teaches wherein the first electrode layer 420 is applied in a first pattern comprising at least two stripes and the stripes range from being substantially parallel to substantially diagonal to the direction of the advancing web (col. 11, lines 1-10 and Fig. 5). Since Cok and Weaver are all from the same field of endeavor, the purpose disclosed by Weaver would have been recognized in the pertinent art of Cok. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply the first electrode layer in a first pattern comprising two stripes in order to individually control by thin film transistor embedded in the substrate as taught by Weaver, column 11, lines 5-10.

Regarding claim 10, Cok teaches the second electrode layer 16, but do not teach wherein the second electrode layer is applied in a second pattern comprising at least two stripes and the second pattern is substantially perpendicular to the first pattern.

However, Weaver teaches wherein the second electrode layer 470 is applied in a second pattern comprising at least two stripes and the second pattern is substantially perpendicular to the first pattern (col. 11, lines 1-10 and Fig. 5). Since Cok and Weaver are all from the same field of endeavor, the purpose disclosed by Weaver would have been recognized in the pertinent art of Cok. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply the second electrode layer in a second pattern comprising at least two stripes and the second pattern is substantially perpendicular to the first pattern in order to individually control by thin film transistor embedded in the substrate as taught by Weaver, column 11, lines 5-10.

Regarding claim 11, Cok teaches the first electrode layer 14, but do not teach applying a mask prior to applying the first electrode

However, Weaver teaches wherein the first pattern is applied by means of applying a mask prior to applying the first electrode layer 420 and removing the mask after applying the first electrode layer 420 (col. 11, lines 1-18 and Fig. 5). Since Cok and Weaver are all from the same field of endeavor, the purpose disclosed by Weaver would have been recognized in the pertinent art of Cok. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply a mask in order to pattern the electrode as taught by Weaver, column 11, lines 1-18.

Regarding claim 12, Cok teaches the second electrode layer 16, but do not teach applying a mask prior to applying the second electrode.

However, Weaver teaches wherein the second pattern is applied by means of applying a mask prior to applying the second electrode layer 470 and removing the mask after applying the first electrode layer 470 (col. 11, lines 1-18 and Fig. 5). Since Cok and Weaver are all from the same field of endeavor, the purpose disclosed by Weaver would have been recognized in the pertinent art of Cok. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply a mask in order to pattern the electrode as taught by Weaver, column 11, lines 1-18.

Regarding claim 13, Cok teaches the electrode layers 14/16, but do not teach wherein the electrode layers are applied by means of a method selected from sputtering, vapor deposition, laser thermal patterning, ink jet printing, screen printing, thermal head printing, and photolithographic patterning.

However, Weaver teaches wherein the electrode layers are applied by means of a method selected from sputtering (col. 9, line 40). Since Cok and Weaver are all from the same field of endeavor, the purpose disclosed by Weaver would have been recognized in the pertinent art of Cok. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to form the electrode layers by sputtering in order to obtain very thin and uniform electrode as taught by Weaver, column 9, lines 40-45.

Regarding claim 21, Cok does not teaches wherein the dimension ranges up to about 10 inches.

However, Weaver teaches wherein the dimension ranges up to about 17 inches (col. 12, lines 20-35). Although Weaver's dimension is not the claimed range (10 inches), this does not define patentable over Weaver since the thickness is well known processing variable and the discovery of the optimum or workable range involves only routine skill in the art.

9. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cok (US Pat No. 6,936,964) in view of Mikheal et al (U.S. Pat No. 6,649,433 hereafter "Mikheal").

Cok does not teaches applying at least one anti-static coating, barrier, and combinations thereof to the substrate prior to application of the first electrode layer.

However, Mikheal teaches applying a barrier to the substrate 14 prior to application of the first electrode layer (col. 4, lines 1-5). Since Cok and Mikheal are all from the same field of endeavor, the purpose disclosed by Mikheal would have been recognized in the pertinent art of Cok. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to form a barrier to the substrate for a various purposes as taught by Mikheal, column 4, line 6.

10. Claims 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver (US Pat No. 6,664,730) in view of Mikheal et al (U.S. Pat No. 6,649,433) (hereafter "Mikheal").

Regarding claim 24, Weaver teaches a method of making an organic light-emitting device comprising:

advancing a web in a direction wherein the web comprises a continuous flexible substrate 410 (col. 8, lines 28-35 and Fig. 4);

applying an insulating layer 430 (col. 8, lines 35-40 and Fig. 4);
applying a light-emitting layer 460 (col. 9, lines 20-32 and Fig. 4); and
applying a second electrode layer 470 electrically isolated from the first electrode layer 420 (col. 9, lines 35-45 and Fig. 4).

Weaver teaches the flexible substrate 410, but do not teach a conductive flexible substrate suitable for use as a first electrode layer.

Mikheal teaches a conductive flexible web substrate suitable for use as a first electrode (anode) layer (col. 8, lines 15-35). Since Weaver and Mikheal are all from the same field of endeavor, the purpose disclosed by Mikheal would have been recognized in the pertinent art of Weaver. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to use conductive flexible web substrate as an electrode layer in order to produce large area flexible light source for automotive, sign, and decorative applications as taught by Mikheal, column 2, lines 55-57.

Regarding claim 25, Weaver teaches wherein the second electrode layer 470 is continuous in the direction of the advancing web 410 (see Figs. 4-5).

Regarding claim 26, Weaver teaches cutting a portion from the web 410 forming an organic light-emitting device having a dimension in the direction of the advancing web and an area (col. 12, lines 48-65).

Regarding claim 27, Weaver teaches wherein the second electrode layer 470 is continuous beyond the dimension of the device prior to cutting (see Figs. 4-5).

Regarding claim 28, Weaver teaches wherein the second electrode layer 470 is continuous throughout the area of the device (see Figs. 4-5).

Regarding claim 29, Weaver teaches wherein the dimension ranges up to about 17 inches (col. 12, lines 20-35). Although Weaver's dimension is not the claimed range (10 inches), this does not define patentable over Weaver since the thickness is well known processing variable and the discovery of the optimum or workable range involves only routine skill in the art.

11. Claims 32 and 33 are rejected under 35 U.S.C. 103(a) as being obvious over McCormick et al (U.S. Pat No. 6,649,433 hereafter "McCormick").

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Regarding claim 32, McCormick teaches a method of making an organic light-emitting device comprising;

advancing a web comprising a flexible substrate 12 in a direction (col. 6, lines 40-67 and Fig. 10);

laminating a polymer web mask 14/15 to the flexible substrate (col. 6, lines 40-67 and Fig. 10);

applying a first electrode layer 46 (col. 6, lines 40-67 and Fig. 10);

removing the polymer web mask (col. 6, lines 40-67 and Fig. 10);

applying a light-emitting layer 16 (col. 7, lines 1-30 and Fig. 11); and

applying a second electrode layer 17 electrically isolated from the first electrode layer; wherein at least one electrode layer is continuous in the direction of the advancing web (col. 7, lines 1-30 and Fig. 11).

Regarding claim 33, McCormick teaches a method of making an organic light-emitting device comprising;

advancing a web comprising a flexible substrate 12 in a direction (col. 6, lines 40-67 and Fig. 10);

applying a first electrode layer 46 (col. 6, lines 40-67 and Fig. 10);

laminating a polymer web mask 14/15 aligning an edge of the mask to an edge of the first electrode layer 46 (col. 6, lines 40-67 and Fig. 10);

applying a light-emitting layer 16 (col. 7, lines 1-30 and Fig. 11);

removing the polymer web mask 14/15 ; and

applying a second electrode layer 17 electrically isolated from the first electrode layer;

wherein at least one electrode layer is continuous in the direction of the advancing web (col. 7, lines 1-30 and Fig. 11).

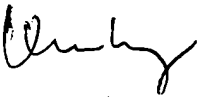
Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quoc Hoang whose telephone number is (571) 272-1780. The examiner can normally be reached on Monday-Friday from 8.00 AM to 5.00 PM.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone numbers of the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Quoc Hoang
Patent examiner/AU 2818


04/07/2006